

**MOP HEAD HAVING A PLURALITY OF  
RECTANGULAR EXTENSIONS**  
BACKGROUND OF THE INVENTION

Field of the Invention

5           This invention relates to a mop head that may be used as either a wet mop head or a dry mop head and, more specifically, to a fabric mop head having a plurality of rectangular extensions protruding from the cleaning surface.

Background Information

10           Prior art mop heads have, generally, been specifically designed to be either a wet mop or a dry mop. Wet mop heads are typically associated with removing a spilled liquid by absorbing the liquid, or, cleaning a floor using water or a water/detergent combination. Dry mop heads, or dust mops, are typically associated with light cleaning or the removal of dust.

15           A first type of wet mop head generally has a plurality of absorbent, elongated strands of a cotton material or synthetic sponge material. The strands may be free at one end to allow the user to spread the mop head over a greater area. Alternatively, the strands may have an extended length and be joined to the mop head at both ends, or one end may be joined to the mop head and the other end to a sliding collar on the  
20 mop handle. The latter configuration allows the user to wring the mop out by twisting the strands about the handle. When in use, the strands act to absorb liquid and as a scrubbing surface. Additionally, due to their elongated structure, the strands are able to reach into cracks, valleys or other imperfections of an uneven floor. This advantage, however, may also act as a disadvantage. That is, on generally smooth  
25 floors, such as linoleum, the uneven and random disposition of the strands prevent the entire mop head from contacting the surface being cleaned. This is a disadvantage especially when applying a treatment, such as wax, to a floor. Wet mop heads of this type also tend to become stiff when dry. As such, absorbent strand mop heads cannot be effectively used as a dry mop head.

30           The second type of wet mop head includes a flat sponge or sheet of absorbent material coupled to a rigid plate or frame. The plate is attached to the backside of the mop head, opposite a cleaning surface. The plate maintains the shape of the sponge

or sheet of absorbent material and ensures that substantially all of the mop head is in contact with the surface to be cleaned. Such mop heads therefore are not as useful on uneven surfaces as the mop head cleaning surface cannot access valleys in the floor surface, such as the grooves between tiles on a tiled floor. Additionally, because dust is easily picked up by contact with a mop, in part due to static electricity, flat sheet and sponge wet mop heads are not effective as dry mop heads. That is, unlike a strand type mop head, the flat sheet and sponge wet mop heads have a limited surface area and are less likely to develop and maintain a static charge.

Dry mop heads generally include a fabric cover structured to fit over, or include, a padded member. The dry mop head is coupled to the mop head frame by hook-and-loop fasteners or by elastic bands. The fabric of a dry mop head is typically thinner than a wet mop head and the padding is required to prevent the mop head frame from damaging the floor surface. The dry mop head further typically includes a plurality of yarn filaments extending from the periphery of the padded portion. The yarn is proficient at collecting dust and other small particles in part due to the static electricity within the strands. Additionally, the yarn strands effectively reach into valleys and grooves as well as brush over an area greater than the padded portion of the mop head. There are also dry mop heads which are structured as thin fabric sheets coupled to a padded mop head. As with a wet mop head, such sheet-like dust mop heads are intended to be used on a substantially flat floor and ensure that the greater part of the mop head is in contact with the surface to be cleaned. Such sheet-like mop heads may be treated with a cleaning agent.

Each of these types of wet and dry mop heads are typically designed to be disposable. That is, after a limited use, the mop head is removed and replaced. The sheet-like dry mop heads generally have the most limited life span, often being designed to clean a single medium sized room. Additionally, while use of elastic bands or hook-and-loop structures allow the dry mop heads to be replaced with little effort, the wet mop head replacement device is generally more robust. For example, a typical cotton strand mop head includes a metal cylinder having a threaded inner surface, while a sponge wet mop head typically includes a plastic frame.

Therefore, there is a need for a mop head that combines the advantages of both wet and dry mop heads. That is, there is a need for a wet mop head that maintains its general shape, but which also is able to reach into valleys and grooves.

5 There is a further need for a mop head that may be reused for an extended period of time.

There is a further need for a mop head that may be used as both a wet mop head and a dry mop head.

There is a further need for a wet mop head that does not require a costly structure for the replacement device.

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#### SUMMARY OF THE INVENTION

These needs, and others, are met by the present invention which provides a mop head having a plurality of generally rectangular extensions extending therefrom. The mop head is made from a flexible and absorbent fabric material such as resinous  
15 foam, felt, cotton, cloth, synthetic sponge, chamois, or synthetic chamois. This material further remains generally flexible after use as a wet mop. The mop head includes an envelope assembly that is generally rectangular and which is structured to be mounted on a rigid and flat frame. The mop head includes an elastic mounting device on the top side of the base. The mop head material is sufficiently durable as to  
20 be cleaned multiple times.

Thus, the mop head of the present invention combines the advantages of the two types of wet mop heads as well as dry mop heads. The mop head of the present invention is sufficiently absorbent to be used as a wet mop head. As with other wet mops, the wringer for the mop head is a plate, or similar device, attached to a bucket.  
25 The mop head generally maintains the flat, rectangular shape due to the rigid frame. The extensions, however, allow the cleaning surface of the mop head to reach into valleys and grooves. Because the extensions remain flexible after use, even as a wet mop, the extensions further allow the mop head to be used as a dry mop head. That is, the flexible extensions are more likely to develop a static charge and may be  
30 brushed over a surface area greater than the area of the rigid frame. The elastic mounting device allows the mop head to be installed and removed easily and is less expensive than metal and plastic mounting devices. The mop head of the present

invention may also be washed with other fabrics, in a washing machine for example, and may therefore be reused multiple times. Machine washing is possible because the mop head of the present invention is entirely made from fabric with no metal or plastic parts.

5           Therefore, it is an object of this invention to provide a mop head that combines the advantages of both wet and dry mop heads.

          It is a further object of this invention to provide a wet mop head that maintains its general shape, but which also is able to reach into valleys and grooves.

          It is a further object of this invention to provide a mop head that may be  
10       reused for an extended period of time.

          It is a further object of this invention to provide a mop head that may be used as both a wet mop head and a dry mop head.

          It is a further object of this invention to provide a wet mop head that does not require a costly structure for the replacement device.

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#### BRIEF DESCRIPTION OF THE DRAWINGS

A full understanding of the invention can be gained from the following description of the preferred embodiments when read in conjunction with the accompanying drawings in which:

20           Figure 1 is an isometric view of a mop.

          Figure 2 is an isometric view of the cleaning surface of the mop head according to the present invention.

          Figure 3 is a cross-sectional view of the envelope taken along line 3-3 in Figure 2.

25           Figure 4 is an alternate embodiment of the mop head mounting device.

          Figure 5 is an alternate embodiment of the mop head mounting device.

          Figure 6 is an alternate embodiment of the mop head.

#### DESCRIPTION OF THE PREFERRED EMBODIMENTS

30           As shown in Figure 1, a mop 10 includes an elongated handle 12, a mop head frame 14, and a mop head 20. The mop head frame 14 is, preferably, a generally rigid rectangular, planar body 16. The handle 12 may be rotatably coupled to the mop head

frame 14 by a pivot means, such as a pivot pin 18. As described below, the mop head 20 is structured to be coupled to the mop head frame 14.

As shown in Figures 2 and 3, the mop head 20 includes a fabric envelope assembly 22 having an upper side 24 and a lower side 26 which are joined at the edges and form a partially open plenum 27. The mop head envelope assembly 22 is, preferably, rectangular having a front edge 28 and a back edge 29 as well as two lateral edges 25. The envelope assembly 22 is, preferably, made from an absorbent, flexible material such as a resinous foam, felt, cotton, cloth, synthetic sponge, or chamois, or synthetic chamois. The material of the envelope assembly 22 shall hereinafter be referred to as "fabric," which is defined to include any of these materials. The envelope assembly upper side 24 includes an opening 30 sized to allow the mop head frame 14 to fit within the plenum 27. As shown in Figure 1, the opening 30 may have an elastic edge 32 that acts as a mounting device 34 and which is structured to couple the mop head 20 to the mop head frame 14.

As shown in Figure 2, the envelope assembly lower side 26 forms a cleaning surface 40. The cleaning surface 40 includes a plurality of elongated, rectangular extensions 42. The rectangular extensions 42 are, preferably, made from the same material as the envelope assembly 22. The extensions 42 have an aspect ratio of between about 0.5 to 4.5 and more preferably about 3.5. Additionally, the extensions 42 have a length of between about 0.5 to 4.5 inches and more preferably about 3.5 inches. Each extension 42 may have a substantially similar aspect ratio and length relative to other extensions 42, or different extensions 42 may have different aspect ratios or length, so long as the aspect ratios or length is within the range discussed above.

The extensions 42 are, preferably, disposed in one or more rows 44, 46 on the cleaning surface 40 with the individual extensions 42 disposed immediately adjacent to each other. The rows of extensions 44, 46, 48 may be aligned or staggered. That is, the extensions 42 in one row 44 may be aligned with the extensions 42 in another row 46, or, the extensions 42 in one row 44 may be staggered with respect to the extensions 42 with respect to the extensions 42 in another row 46.

The extensions 42 in the rows 44, 48 adjacent to the front and back edges 28, 29 of the mop head 20, preferably, are disposed between about 0.25 to 1.0 inch, and

more preferably about 0.5 inch of the front and back edges 28, 29 of the mop head 20. As such, when the mop head 20 is in use, the extensions 42 may extend beyond the edges of the mop head envelope assembly 22, thereby increasing the effective surface area of the cleaning surface 40. The extensions 42, preferably, have only one end  
5 coupled to the cleaning surface 40. However, the extensions 42 may have both tips coupled to the cleaning surface 40, thereby forming loops.

The extensions 42 may be coupled to the cleaning surface 40 by various devices. For example, with certain materials, the extensions 42 may be formed integrally with the cleaning surface 40. Alternatively, with materials such as strips of  
10 cotton, the extensions 42 may be coupled to the cleaning surface 40 by sewing thread 43 or by an adhesive 45, such as glue.

As shown in Figures 4 and 5, the mop head 20 may be attached to the mop head frame 14 by various mounting devices 34. The mounting devices 34 are typically disposed on the envelope assembly upper side 24. For example, as shown in  
15 Figure 3, the mounting device 34 is a plurality of elastic bands 50 that extend across the opening 30. The elastic bands 50 may extend generally parallel to each other and from one lateral side of the mop head envelope assembly 22 to the opposite lateral side. However, as shown, the elastic bands 50 preferably each extend from one corner of the mop head envelope assembly 22 to the diagonally opposite corner.  
20 Alternatively, the mounting device 34 may be a hook-and-loop fastener wherein strips 60 of hook-and-loop material having a first part 62 and a second part 64, wherein the first part 62 is either the hook or loop and the second part 64 is the opposite loop or hook. The strips 60 are disposed on the envelope assembly upper side 24 around the opening 30. The strips 60 may attach to each other while extending across the  
25 opening 30, or, the mop head 20 may only have one part 62 with the opposite part 64 disposed on the mop head frame 14.

Additionally, the plurality of extensions 42 may be configured differently than as described above. As shown in Figure 6, the extensions 142 are strips 141 of fabric that are coupled to the envelope assembly lower side 26 at a medial location as  
30 opposed to one end as described above. That is, the strips 141 of fabric, which are generally rectangular, are folded approximately in half forming a V-shape having a vertex 143. The vertex 143 is then coupled to the envelope assembly lower side 26

creating an extension 142 on either side of the vertex 143. Again, the extensions 142 may be disposed in rows 144, 146, 148 that are aligned or staggered (not shown).

Alternatively, the plurality of extensions 142 may be disposed in a first, outer set of extensions 160 and a second, inner set of extensions 162. Both the first, outer set of extensions 160 and the second, inner set of extensions 162 are V-shaped. The vertices 143 of each of the first, outer set of extensions 160 and the second, inner set of extensions 162 are disposed along a single line, with the second, inner set of extensions 162 being disposed within the first, outer set of extensions 160. In this configuration, it is preferable to have the first, outer set of extensions 160 in each row 144, 146, 148 aligned with each other, and the second, inner set of extensions 162 in each row 144, 146, 148 aligned with each other, while the first, outer set of extensions 160 and the second, inner set of extensions 162 are staggered relative to each other. Each extension 142 may have a substantially similar aspect ratio and length relative to other extensions 142, or different extensions 142 may have different aspect ratios or length, so long as the aspect ratios or length is within the range discussed above.

While specific embodiments of the invention have been described in detail, it will be appreciated by those skilled in the art that various modifications and alternatives to those details could be developed in light of the overall teachings of the disclosure. For example, the mop head 20 has been shown as being round, however, the mop head 20 may have any shape so long as extensions 42 are coupled to the cleaning surface 40. Accordingly, the particular arrangements disclosed are meant to be illustrative only and not limiting as to the scope of invention which is to be given the full breadth of the claims appended and any and all equivalents thereof.